Dynamic Nature of the Ligustilide Complex

Submitted by Andreas Schinkovitz on Wed, 04/29/2015 - 20:03

Titre	Dynamic Nature of the Ligustilide Complex
Type de publication	Article de revue
Auteur	Schinkovitz, Andreas [1], Pro, Samuel M [2], Main, Matthew [3], Chen, Shaonong [4], Jaki, Birgit U [5], Lankin, David C [6], Pauli, Guido [7]
Editeur	American Chemical Society
Type	Article scientifique dans une revue à comité de lecture
Année	2008
Langue	Anglais
Date	Jan-09-2008
Numéro	9
Pagination	1604-11
Volume	71
Titre de la revue	Journal of Natural Products
ISSN	0163-3864
Résumé en anglais	Monomeric phthalides such as *Z*-ligustilide (**1**) and *Z*-butylidenephthalide (**2**) are major constituents of medicinal plants of the Apiaceae family. While **1** has been associated with a variety of observed biological effects, it is also known for its instability and rapid chemical degradation. For the purpose of isolating pure **1** and **2**, a gentle and rapid two-step countercurrent isolation procedure was developed. From a supercritical CO2 fluid extract of*Angelica sinensis* roots, the phthalides were isolated with high GC-MS purities of 99.4% for **1**and 98.9% for **2** and consistently lower qHNMR purities of 98.1% and 96.4%, respectively. Taking advantage of molarity-based qHNMR methodology, a time-resolved study of the dynamic changes and residual complexity of pure **1** was conducted. GC-MS and (qH)NMR analysis of artificially degraded **1** provided evidence for the phthalide degradation pathways and optimized storing conditions. Parallel qHNMR analysis led to the recognition of variations in time- and process-dependent sample purity and has impact on the overall assessment of time-dependent changes in complex natural products systems. The study underscores the importance of independent quantitative monitoring as a prerequisite for the biological evaluation of labile natural products such as monomeric phthalides.
URL de la notice	http://okina.univ-angers.fr/publications/ua10584 [8]
DOI	10.1021/np800137n [9]
Lien vers le document	http://pubs.acs.org/doi/abs/10.1021/np800137n [10]
Titre abrégé	J. Nat. Prod.

Liens

[1] http://okina.univ-angers.fr/a.schinkov/publications

[2] http://okina.univ-angers.fr/publications?f[author]=18757
[3] http://okina.univ-angers.fr/publications?f[author]=18758
[4] http://okina.univ-angers.fr/publications?f[author]=18772
[5] http://okina.univ-angers.fr/publications?f[author]=18760
[6] http://okina.univ-angers.fr/publications?f[author]=18755
[7] http://okina.univ-angers.fr/publications?f[author]=18776
[8] http://okina.univ-angers.fr/publications/ua10584
[9] http://dx.doi.org/10.1021/np800137n
[10] http://pubs.acs.org/doi/abs/10.1021/np800137n